

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

1300 I STREET, N. W.
WASHINGTON, DC 20005-3315

202 • 408 • 4000
FACSIMILE 202 • 408 • 4400

WRITER'S DIRECT DIAL NUMBER:

(202) 408-4023

November 12, 1999

ATTORNEY DOCKET NO. 07099.1193-00

Box PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

Re: New U.S. Patent Application
Title: DEMAND AGGREGATION AND DISTRIBUTION SYSTEM
Inventor: Terrell B. JONES

Sir:

We enclose the following papers for filing in the United States Patent and Trademark Office in connection with the above patent application.

1. Application - 38 pages, including 11 independent claims and 22 claims total.
2. Drawings - 6 sheets of informal drawings (Figures 1-6).
3. A check for \$1,402.00 representing a \$760.00 filing fee and \$642.00 for additional claims.

This application is being filed under the provisions of 37 C.F.R. § 1.53(f). Applicant awaits notification from the Patent and Trademark Office of the time set for filing the Declaration.

Please accord this application a serial number and filing date.



ATLANTA
404•653•6400
PALO ALTO
650•849•6600

TOKYO
011•813•3431•6943
BRUSSELS
011•322•646•0353

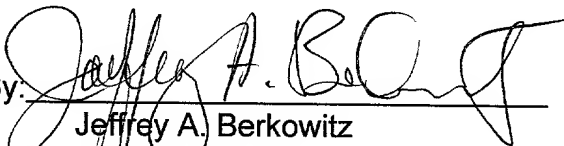
00432057 11/12/99

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.
Assistant Commissioner for Patents
November 12, 1999
Page 2

The Commissioner is hereby authorized to charge any additional filing fees due and any other fees due under 37 C.F.R. § 1.16 or § 1.17 during the pendency of this application to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

By: 
Jeffrey A. Berkowitz
Reg. No. 36,743

JAB:jl
Enclosures

060311 " 4 50332490

UNITED STATES PATENT APPLICATION

OF

Terrell B. JONES

FOR

DEMAND AGGREGATION AND DISTRIBUTION SYSTEM

66211 "4963460

LAW OFFICES

FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N.W.
WASHINGTON, D.C. 20005
202-408-4000

BACKGROUND OF THE INVENTION

A. Field of the Invention

This invention relates to electronic commerce and, more particularly, to an apparatus and methods for determining consumer demand for goods and services such as travel-related products. This invention also relates to an apparatus and methods for distributing information reflecting consumer demand for goods and services to multiple suppliers capable of supplying the goods and services in demand for the purpose of packaging goods and services and offering those packages to the consumers.

B. Description of the Related Art

The Internet has been hailed the marketplace of the future, a result of its accessibility and usability. A computer equipped with a communication mechanism such as a modem and telephone connection is nearly all that is necessary to gain access to the Internet. A program called a browser, such as the Netscape Navigator from Netscape Corporation, makes it a simple task to traverse the vast network of information available on the Internet and, specifically, its subpart known as the "World Wide Web."

The architecture of the Web follows a conventional client-server model. The terms "client" and "server" are used to refer to a computer's general role as a requester of data (the client) or provider of data (the server). Under the Web environment, Web

5

10

15

But the number of retailers with online stores is growing exponentially every year, making it increasingly difficult for online shoppers to navigate the Web to locate particular products at the best prices. This challenge for consumers also introduces a problem for merchants in designing campaigns to attract consumers to the merchants' Web sites and away from their competitors' sites.

Certain known business methods, and conventional implementations of those methods on the Internet, give consumers greater control over a business deal by permitting consumers to request products and services and set the price they are willing to pay for those products and services, such as travel products like airfare, car rentals, and similar travel commodities. See, for example, systems disclosed in U.S. Patent Nos. 5,794,207 and 5,845,265. One example of this type of business method is currently available on the Internet at the Uniform Resource Locator ("URL") www.priceline.com. Priceline.com claims to communicate consumer demand for products and services derived from the requests directly to suppliers or to their private databases. Consumers agree to hold their offers open for a specified period of time to enable priceline.com to fulfill their offers from inventory provided by the suppliers. By requiring consumers to be flexible with respect to suppliers, priceline.com claims to enable suppliers to generate incremental revenue without disrupting their existing distribution channels or retail pricing structures. But this approach fails to recognize the importance of the information on consumer demand that is not satisfied by the

5

10

15

SUMMARY OF THE INVENTION

invention overcome the shortcomings of existing systems by aggregating and

5 satisfying demand for items. In one implementation consistent with the present invention a data processing system aggregates information reflecting demand for an item based on input requests associated with the item, each request having been received from a remote user and including remote user identification information, provides the aggregated information to a plurality of suppliers, each capable of supplying the item, receives at least one proposed response from at least one of the suppliers, including a proposal for providing the item to the remote users, and provides the proposed response to the remote users based on the remote user identification information. Aggregated information is provided without the remote user identification information associated the requests.

10 In another implementation consistent with the present invention that aggregates and satisfies demand for travel products, a data processing system aggregates information reflecting demand for a set of travel products based on input requests, each request having been received from a remote user and including remote user identification information, selects a group travel product based on the aggregated information, and provides information reflecting the group travel product to the remote users based on the remote user identification information. To select the group travel product based on the aggregated information, the data processing system may provide the aggregated information to a plurality of travel product suppliers, and receive responses from a set of the travel product suppliers, each response including

Figure 1 consists of 10 line graphs arranged vertically, labeled 1 through 10. Each graph plots a physiological parameter against time (0 to 10 minutes). The y-axis for all graphs ranges from 0 to 100. The x-axis for all graphs ranges from 0 to 10 minutes. The graphs show that HR, BP, SV, CO, SVR, PVR, PPA, and PVP all increase during the intervention period, while PVP/PPA remains relatively stable.

Parameter	Baseline (0-10 min)	Intervention (10-20 min)
HR (b/min)	~70	~85
BP (mmHg)	~100	~120
SV (ml)	~50	~60
CO (l/min)	~5	~6
SVR (mmHg/l/min)	~20	~15
PVR (mmHg/l/min)	~10	~15
PPA (mmHg)	~10	~15
PVP (mmHg)	~10	~15
PVP/PPA	~1.0	~1.0

15

FIG. 1 is a pictorial diagram of a computer network in which systems consistent with the present invention may be implemented;

FIG. 3 illustrates the retrieval of remote image and text and their integration in a document:

6

FIG. 5 is a block diagram of the architecture of a savings discovery server in a manner consistent with the principle of the present invention; and

FIG. 6 is a flow chart of the steps performed by a savings discovery server in a manner consistent with the principle of the present invention.

DETAILED DESCRIPTION

Reference will now be made in detail to an implementation consistent with the present invention as illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings and the following description to refer to the same or like parts.

Introduction

Systems consistent with the present invention enable consumers to specify demand for particular goods and services. The systems use this information to target particular goods and services to the consumers.

Systems consistent with the present invention collect consumer demand for particular goods and services. In the case of travel, this demand may include preferred travel itineraries, including the location of departure and destination, travel dates, and period of stay at the destination.

The systems then derive a package including a set of goods or services capable of satisfying the consumer demand. In the travel example, a package may include all components of the consumers' preferred travel itinerary, i.e., round trip airfare and

accommodations during a stay at the destination.

5 The package may be derived from stored information reflecting the goods and services available from multiple suppliers. In another configuration, suppliers capable of providing the goods and services in demand may be notified of demand from a pool of consumers and asked to provide one or more components to a package. Again in the travel example, a repository such as a computerized reservation system ("CRS"), an example of which is available from Sabre Inc., may be used to identify the suppliers as well as their inventory of travel products such that a set of products can be combined to form a package. The CRS also has pricing information with which to properly price the package. Alternative, the repository, such as a CRS, may be used to identify potential suppliers for a package for the purpose of seeking input from each potential supplier on a component or components for a package.

10
15 Information reflecting these packages is then provided to selected consumers based on the demand information. If a consumer indicates interest in travel from point A to point B, he receives information on any packages satisfying this interest. The consumer generally does not receive information on any other packages unless a determination is made that such other package(s) would be of interest to the consumer. For example, it may be determined that a package involving travel from point A to point C might be of interest to a particular consumer because of a relationship between points B and C. In this event, the consumer that indicates

5

10

15

20, HENDERSON,
ABOW, GARRETT,
DUNNER, L.L.P.
O I STREET, N. W.
NGTON, D. C. 20005
02-408-4000

9

general, the size of a computer or the resources associated with it do not preclude the computer's ability to act as a client or a server. Further, each computer may request data in one transaction and provide data in another transaction, thus changing the computer's role from client to server, or vice versa.

5 A client, such as computer 102, may request a file from server A 120. Since computer 102 is directly connected to server A 120, for example, through a local area network, this request would not normally result in a transfer of data over what is shown as "network" of FIG. 1. The "network" of FIG. 1 represents, for example, the Internet, which is an interconnection of networks. A different request from computer 102 may be for a file that resides in server B 122. In this case, the data is transferred from server B 122 through the network to server A 120 and, finally, to computer 102. The distance between server A 120 and server B 122 may be very long, e.g. across continents, or very short, e.g., within the same city. Further, in traversing the network the data may be transferred through several intermediate servers and many routing devices, such as bridges and routers.

15 FIG. 2 shows, in more detail, an example of a client-server system interconnected through network 100. In this example, a server system 222 is interconnected through network 100 to client system 220. Client system 220 includes conventional components such as a processor 224, memory 225 (e.g. RAM), a bus 226 which couples processor 224 and memory 225, a mass storage device 227 (e.g. a

5

10

15

LAW OFFICES
E. AN, HENDERSON,
RABOW, GARRETT,
DUNNER, L.L.P.
100 I STREET, N. W.
WASHINGTON, D. C. 20005
202-408-4000

To further define the addresses of resources on the Internet, a Uniform Resource Locator system was created that uses a Uniform Resource Locator (URL) as a descriptor that specifically defines a type of Internet resource and its location. URLs have the following format: "resource-type://domain.address/path-name." The "resource-type" defines the type of Internet resource. Web documents, for example, are identified by the resource type "http", which indicates the protocol used to access the document.

To access a document on the Web, the user enters a URL for the Web document into a browser program executing on a client system with a connection to the Internet. The Web browser then sends a request in accordance with the HTTP protocol to the Web server that has the Web document using the URL. The Web server responds to the request by transmitting the requested object to the client. In most cases, the object is a plain text document containing text (in ASCII) that is written in HTML. Such objects often contain hyperlinks to other Web documents. The Web browser displays the HTML document on the screen for the user and the hyperlinks to other Web documents are emphasized in some fashion such that the user can selected the hyperlink.

In some instances, the HTML document may contain data from more than one server. For example, FIG. 3 illustrates the retrieval of remote text and images and their integration in a Web document by a client system 340. In FIG. 3, server A 310

contains an image 315, server B 320 contains a combination of text and image data 325 and server C 330 contains text data 335. Each of these servers is remotely located from the other servers and client 340. The transfer of data is via network 100. It should be appreciated that the text and image files could be located in the same server which is remote from client 340.

Different techniques are available to display these types of composite Web documents. For example, a program called a servlet executing on one of the servers may combine data from the various servers referenced in a selected Web document and transmit the composite Web document to the client. In other configurations, the client may utilize a program called an applet, which may be transmitted to the client from one of the servers, to access the multiple servers offering parts of the composite and to build the composite Web document.

System Architecture and Operation

Systems consistent with the present invention employ a demand aggregation and distribution server, for example, the server 400 shown in FIG. 4. Server 400 is connected to a network interface 445 that facilitates communication with consumers and suppliers on the Internet. Server 400 includes a number of components, demand aggregation processor 405, response packaging processor 420, consumer demand datastore 425 and supplier datastore 430. The operation of each of these components will be explained below with reference to FIGs. 5 and 6.

Figure 5 shows a demand aggregation and distribution server 400 and machines distributed in the network having facilities such as interfaces for a consumer and supplier to communicate with server 400. These interfaces may be, for example, Web browser programs. FIG. 5 illustrates an example of this configuration with consumer interface 510 and supplier interface 530 communicably connected to server 400. As shown multiple consumers and multiple suppliers connect to and communicate with server 400.

Consumer demand for particular goods and services is stored in datastore 425. For example, datastore 425 may include information reflecting a particular consumer's interest (i.e., demand) for a particular product. The datastore 425 also includes information identifying the consumer. This identifying information may be used to contact the consumer when the product in demand or a product that is determined to be a comparable product becomes available. For example, the identifying information may be selected from the group consisting of the consumer's name, street address, telephone number, facsimile number, and e-mail address.

In one configuration, suppliers provide information on available goods and services. This information is stored in datastore 430. For example, datastore 430 may include a product inventory, such as seats available on scheduled flights, rooms available in hotels, cars available at airports for rental, and similar travel resources. This inventory may be combined in advance by suppliers into packages, or response

5

15

5 Consumer interface 510 allows each buyer to input information reflecting demand for products and services. Datastore 425 persistently stores the consumers' demand for subsequent access/marketing analysis. The interface 510 also permits each consumer to receive information from the server 400, including information on package responses. In the example where multiple consumers indicate an interest in round trip travel between New York and Miami on particular dates, server 400 would offer those consumers a travel package including, for example, the requested round trip travel, accommodations during their stay in Miami and transportation such as a car rental. Information on such a package may be stored in the supplier datastore 430. Alternatively, server 400 may provide available suppliers with information on the aggregated consumer demand with the suppliers providing the package responses. The server 400 would then offer all of the package responses to the consumers or select one or more of the responses and provide only the selected response(s) to the consumers.

15 Supplier interface 530 allows product and service suppliers to input, configure, target, and maintain products, including pre-packaged products and services in the datastore 430. This datastore 430 may contain pre-packaged offerings of products and services that have been pre-configured and pre-negotiated by consolidators. Alternatively, in the configuration where server 400 provides available suppliers with information on the aggregated consumer demand with the

suppliers providing the package responses, the information identifying suppliers in datastore 430 may be used to locate the available suppliers to whom the demand information should be transmitted.

FIG. 6 is a flow chart of the operations performed by server 400. Two alternative methods of operation are illustrated (i.e. steps 610 to 630 and steps 650 to 675). In the first step of both methods the server 400 receives the buyers' demand for products and/or services (step 605). Preferably, demand aggregation processor 405 performs this operation. Then in the first method, after server 400 receives the demand information (and stores it in datastore 425), server 400 accesses datastore 430 for information on suppliers and their offerings (e.g., products and services) (step 610) for the purpose of generating one or more package responses (step 615). Response packaging processor 420 performs this operation. For example, one supplier may offer round trip air travel between New York and Miami and another supplier may offer hotel accommodations in Miami. In this case server 400 combines information on the offerings of both of these companies together into a package.

Server 400 then uses response packaging processor 420 to notify the relevant consumers, based on the demand information, of the available package(s) that likely satisfy the consumer demand (step 620). Server 400 uses the stored identification information for consumers to perform this notification step. Assuming consumers are interested in purchasing a package provided by server 400, response packaging

processor 420 may receive a purchase commitment from one or more consumers (step 625). This commitment can take the form of an unsecured reservation or a purchase using, for example, a credit card or other electronic payment method. The server 400 then notifies the relevant supplier(s) of the purchase commitments received from the consumers (step 630). This notification may simply be a indication of the purchase commitment or it may include a payment to the supplier(s) for the purchased package. With the latter approach, suppliers do not have access to information identifying the consumers until after the consumer commits to a particular package. This protects the consumer's anonymity from the supplier(s) until after a purchase commitment is made.

In the alternative operation, server 400 accesses datastore 430 for information identifying suppliers capable of providing one or more components to a package derived from the consumer demand information (step 650). Server 400 then provides information on the consumer demand to the identified suppliers (step 655) and receives any responses with information useful for a package response (step 660). For example, Alpha Airlines may be identified as a potential supplier to respond to consumer demand. Alpha Airlines may respond with information reflecting an offer to carry 50 or more consumers from New York to Miami on December 23, 1999 at a particular airfare. Hospitality Hotels may have also been identified as a potential supplier to respond to consumer demand. The hotel company may have responded

5

15

20, HENDERSON,
ABOW, GARRETT,
DUNNER, L.L.P.
D I STREET, N. W.
NGTON, D.C. 20005
02-408-4000

19

LAW OFFICES

20

WHAT IS CLAIMED IS:

1. A method for aggregating and satisfying demand for items, the method comprising the steps performed by a data processing system, of:

aggregating information reflecting demand for an item based on input requests associated with the item, each request having been received from a remote user and including remote user identification information;

providing the aggregated information to a plurality of suppliers, each capable of supplying the item without also providing remote user identification information from the requests;

receiving at least one proposed response from at least one of the suppliers, including a proposal for providing the item to the remote user; and

providing the proposed response to the remote user based on the remote user identification information.

07099-1193-00000

LAW OFFICES

FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, D. C. 20005
202-408-4000

selecting a group travel product based on the aggregated information; and

providing information reflecting the group travel product to the remote user based on the remote user identification information.

receiving responses from a set of the travel product suppliers, each response including information reflecting a proposed group travel product, wherein each proposed group travel product reflects a discount for the corresponding travel product that is determined based on the aggregated information, and wherein the step of providing information reflecting the group travel product to the remote user based on the remote user identification information includes the substep of:

LAW OFFICES

23

LAW OFFICES
GAGAN, HENDERSON,
ABOW, GARRETT,
DUNNER, L.L.P.
1001 STREET, N. W.
WASHINGTON, D. C. 20005
202-408-4000

5. A system for aggregating and satisfying demand for travel products, comprising:

a processor for executing programs; and

a memory for storing a program executable by the processor, the stored program including instructions for (i) aggregating information reflecting demand for a set of travel products based on input requests, each request having been received from a remote user and including remote user identification information, (ii) selecting a group travel product based on the aggregated information, and (iii) providing information reflecting the group travel product to the remote users based on the remote user identification information.

6. The system of claim 5, wherein selecting a group travel product based on the aggregated information includes (a) providing the aggregated information to a plurality of travel product suppliers, and (b) receiving responses from a set of the travel product suppliers, each response including information reflecting a proposed group travel product, wherein each proposed group travel product reflects a discount for the corresponding travel product that is determined based on the aggregated information, and wherein providing information reflecting the group travel product to the remote users based on the remote user identification information includes (a) transmitting travel option information related to at least one of the proposed group

travel products to a set of the remote users based on the aggregated information.

07099-1193-00000

LAW OFFICES

FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, D. C. 20005
202-408-4000

7. A computer readable medium containing instructions for controlling a computer system to perform a method for aggregating and satisfying demand for items, the method comprising:

aggregating information reflecting demand for an item based on input requests associated with the item, each request having been received from a remote user and including remote user identification information;

providing the aggregated information to a plurality of suppliers, each capable of supplying the item without also providing remote user identification information from the requests;

receiving at least one proposed response from at least one of the suppliers, including a proposal for providing the item to the remote users; and

providing the proposed response to the remote users based on the remote user identification information.

8. A computer readable medium containing instructions for controlling a computer system to perform a method for aggregating and satisfying demand for travel products, the method comprising:

aggregating information reflecting demand for a set of travel products based on input requests, each request having been received from a remote user and including remote user identification information;

selecting a group travel product based on the aggregated information; and

providing information reflecting the group travel product to the remote users based on the remote user identification information.

9. The computer readable medium of claim 8, wherein selecting a group travel product based on the aggregated information includes:

providing the aggregated information to a plurality of travel product suppliers; and

receiving responses from a set of the travel product suppliers, each response including information reflecting a proposed group travel product, wherein each proposed group travel product reflects a discount for the corresponding travel product that is determined based on the aggregated information, and wherein providing information reflecting the group travel product to the remote users based on the remote user identification information includes:

LAW OFFICES
EGAN, HENDERSON,
ABOW, GARRETT,
DUNNER, L.L.P.
101 STREET, N. W.
WASHINGTON, D. C. 20005
202-408-4000

receiving information reflecting demand for a set of items by a plurality of users;

generating one or more package responses, each package response reflecting offerings of at least one of the identified suppliers;

11. The method of claim 10, further comprising:

12. The method of claim 11, further comprising:

notifying the supplier associated with the selected package response the

LAW OFFICES

31

notifying each of the plurality of users of each package response using stored information identifying a location to address any package responses to each of the user.

receiving a purchase commitment from a first user of the plurality of users, including information identifying a package response selected by the first user and payment information identifying the first user's selected form of payment for the selected package response.

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, D. C. 20005
202-408-4000

16. A system for aggregating and satisfying demand for items, comprising:
means for receiving information reflecting demand for a set of items by a plurality of users;

means for accessing a memory for information on a plurality of suppliers and their offerings to identify suppliers having offerings capable of satisfying the demand;

means for generating one or more package responses, each package response reflecting offerings of at least one of the identified suppliers;

means for notifying each of the plurality of users of each package response using stored information identifying a location to address any package responses to each of the user.

17. The system of claim 16, further comprising:

means for receiving a purchase commitment from a first user of the plurality of users, including information identifying a package response selected by the first user and payment information identifying the first user's selected form of payment for the selected package response.

18. The system of claim 17, further comprising:

means for notifying the supplier associated with the selected package response the purchase commitment.

19. A system for aggregating and satisfying demand for items, comprising:
means for receiving information reflecting demand for a set of items by a plurality of users;

means for providing a plurality of suppliers with a notification reflecting the demand information;

means for receiving one or more package responses from suppliers, each package response representing a supplier's offering intended by the supplier to satisfy the demand; and

means for notifying each of the plurality of users of each package response using stored information identifying a location to address any package responses to each of the user.

20. The system of claim 19, further comprising:

means for receiving a purchase commitment from a first user of the plurality of users, including information identifying a package response selected by the first user and payment information identifying the first user's selected form of payment for the selected package response.

21. The system of claim 20, further comprising:

means for notifying the supplier associated with the selected package response

22. A computer-implemented method for aggregating and satisfying demand for items using a network, comprising:
- providing an interface in the network for consumer and supplier to share information concerning items;
 - permitting each one of a set of consumers access to the interface to provide consumer demand information reflecting demand for a set of items;
 - permitting a set of suppliers access to the interface to review aggregated demand information that reflects the information provided by all of the consumers in the set of consumers, each one of the suppliers in the set of suppliers being selected based on stored information reflecting each supplier's ability to satisfy the demand for the set of items;
 - receiving one or more package responses, each package response reflecting offerings of at least one of the selected suppliers;
 - notifying each of the plurality of users of each package response using stored information identifying a location to address any package responses to each of the user.

06247-2936460

LAW OFFICES

FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, D. C. 20005
202-408-4000

ABSTRACT

Methods, systems, and articles of manufacture consistent with the present invention use a data processing system to aggregate information reflecting demand for an item based on input requests associated with the item, each request having been received from a remote user and including remote user identification information, provide the aggregated information to a plurality of suppliers, each capable of supplying the item, receives at least one proposed response from at least one of the suppliers, including a proposal for providing the item to the remote users, and provides the proposed response to the remote users based on the remote user identification information. Aggregated information is provided without the remote user identification information associated the requests.

07099-1193-00000

LAW OFFICES

FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N.W.
WASHINGTON, D.C. 20005
202-408-4000

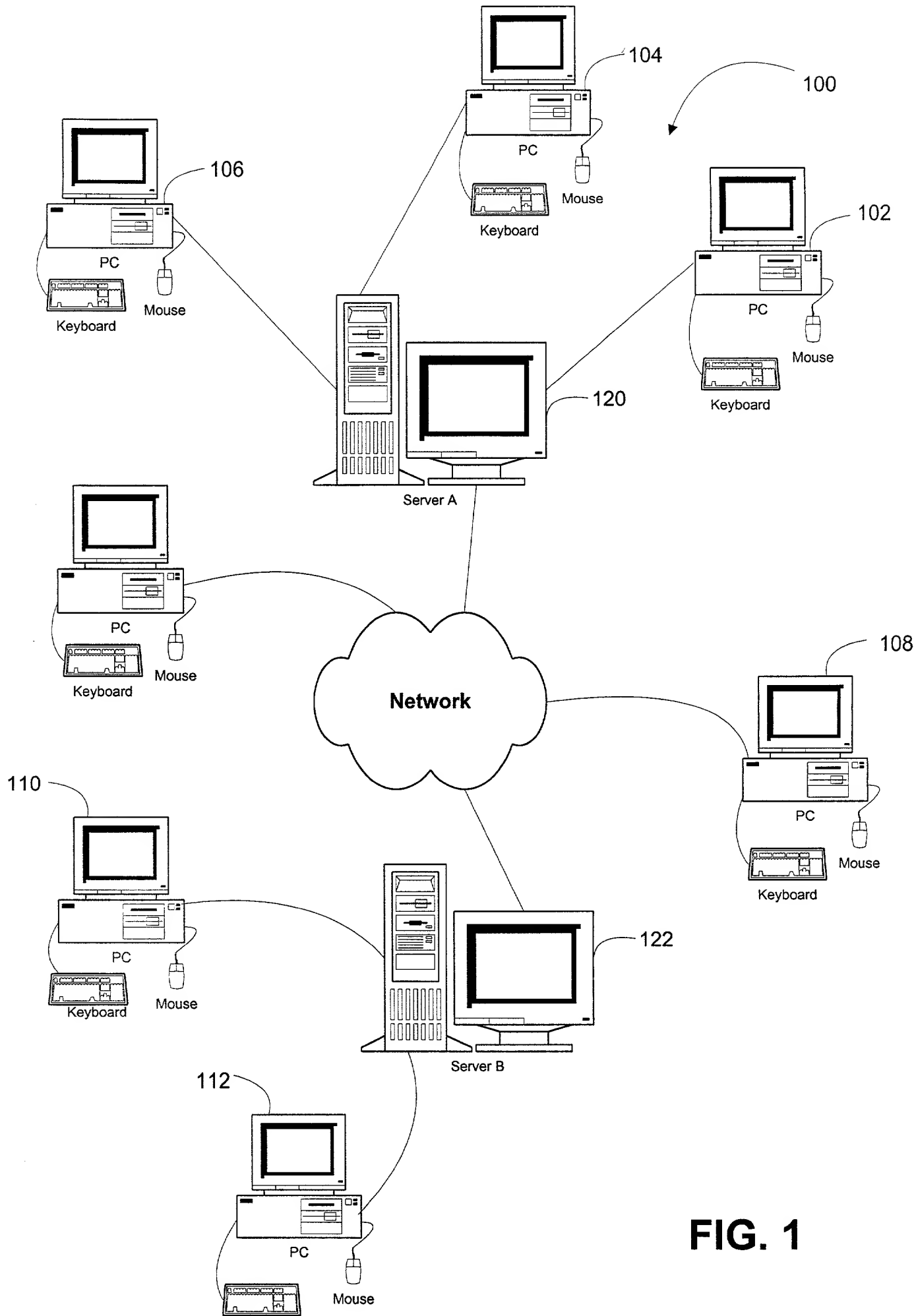


FIG. 1

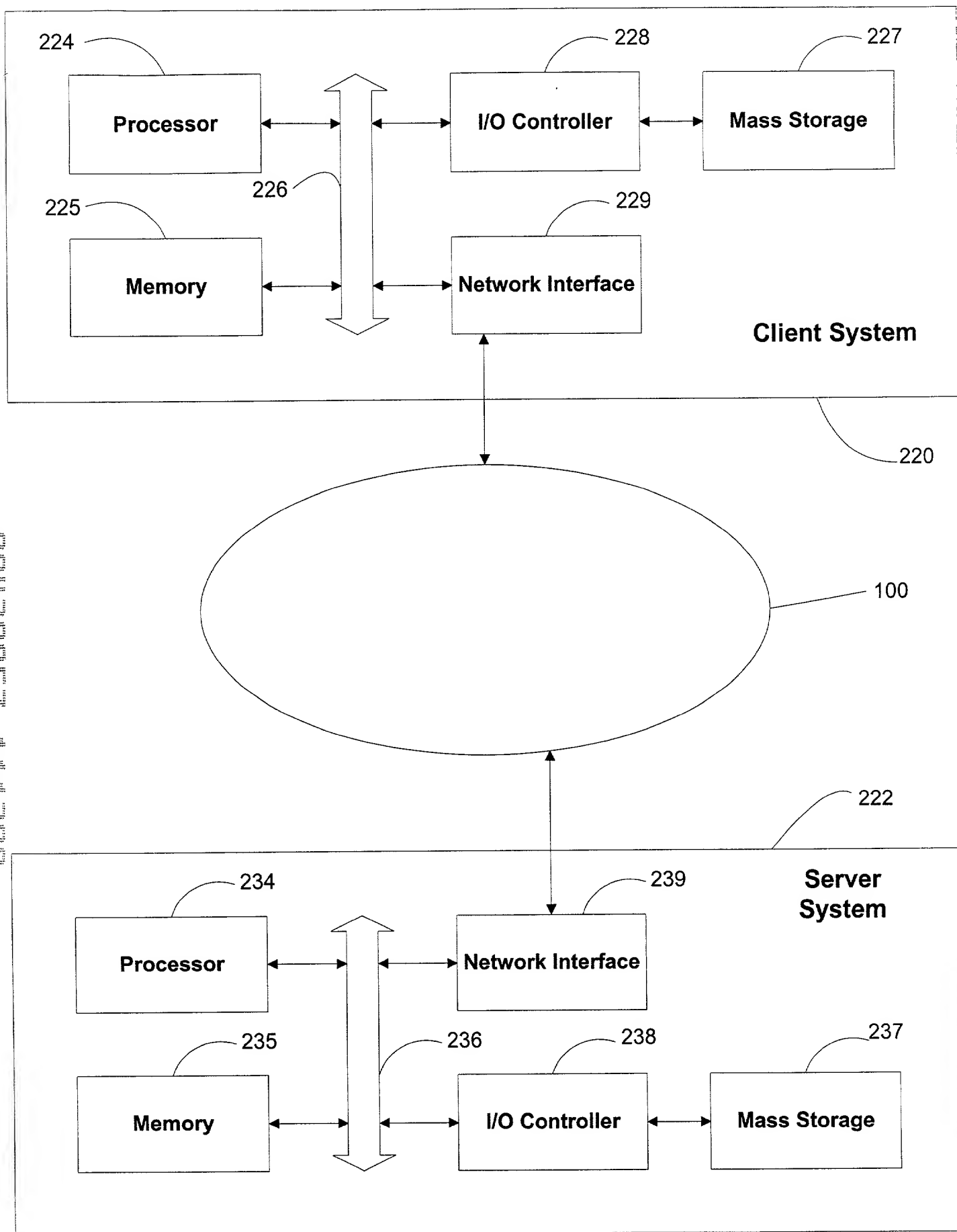


FIG. 2

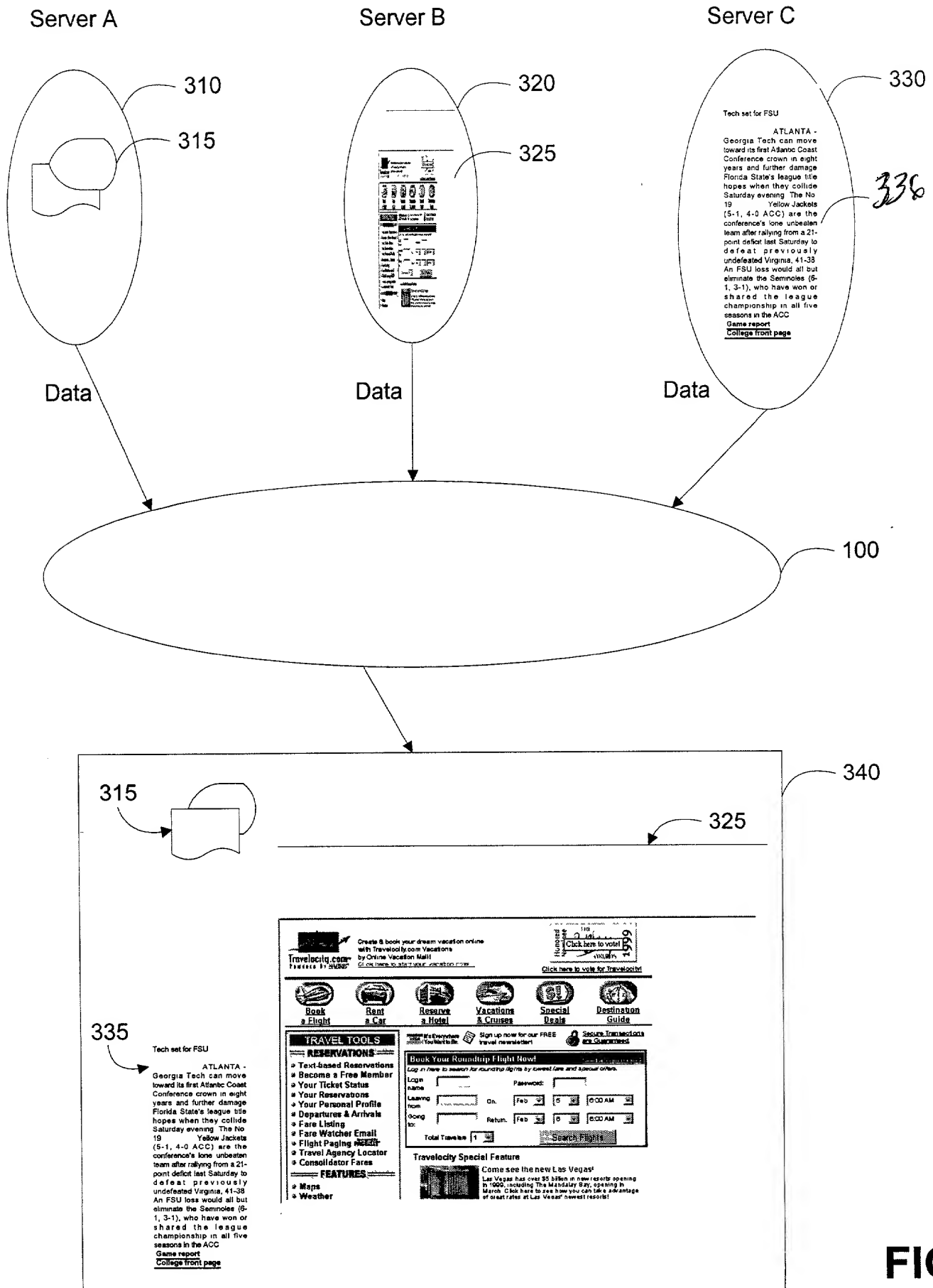


FIG. 3

FIG. 4

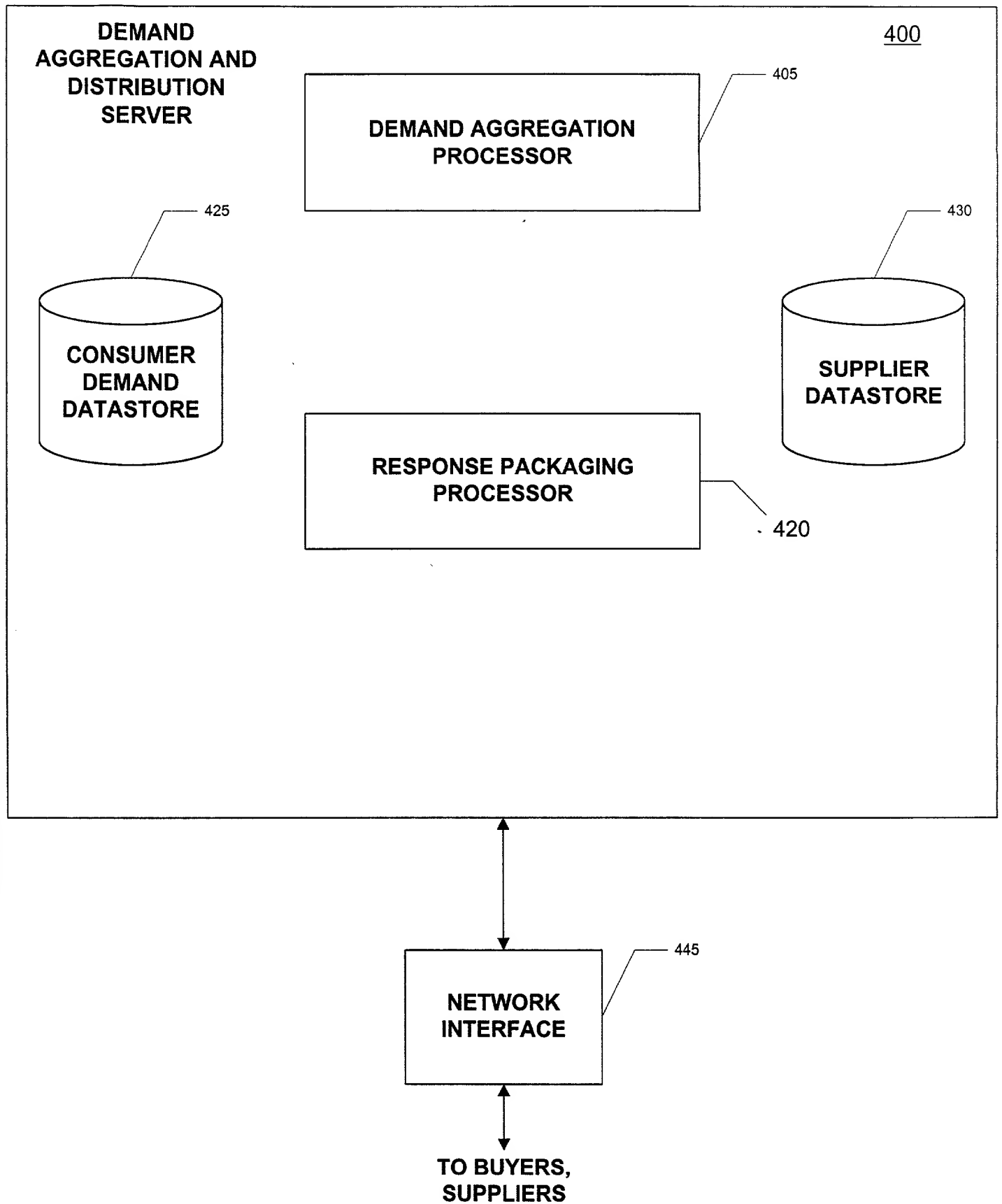


FIG. 4

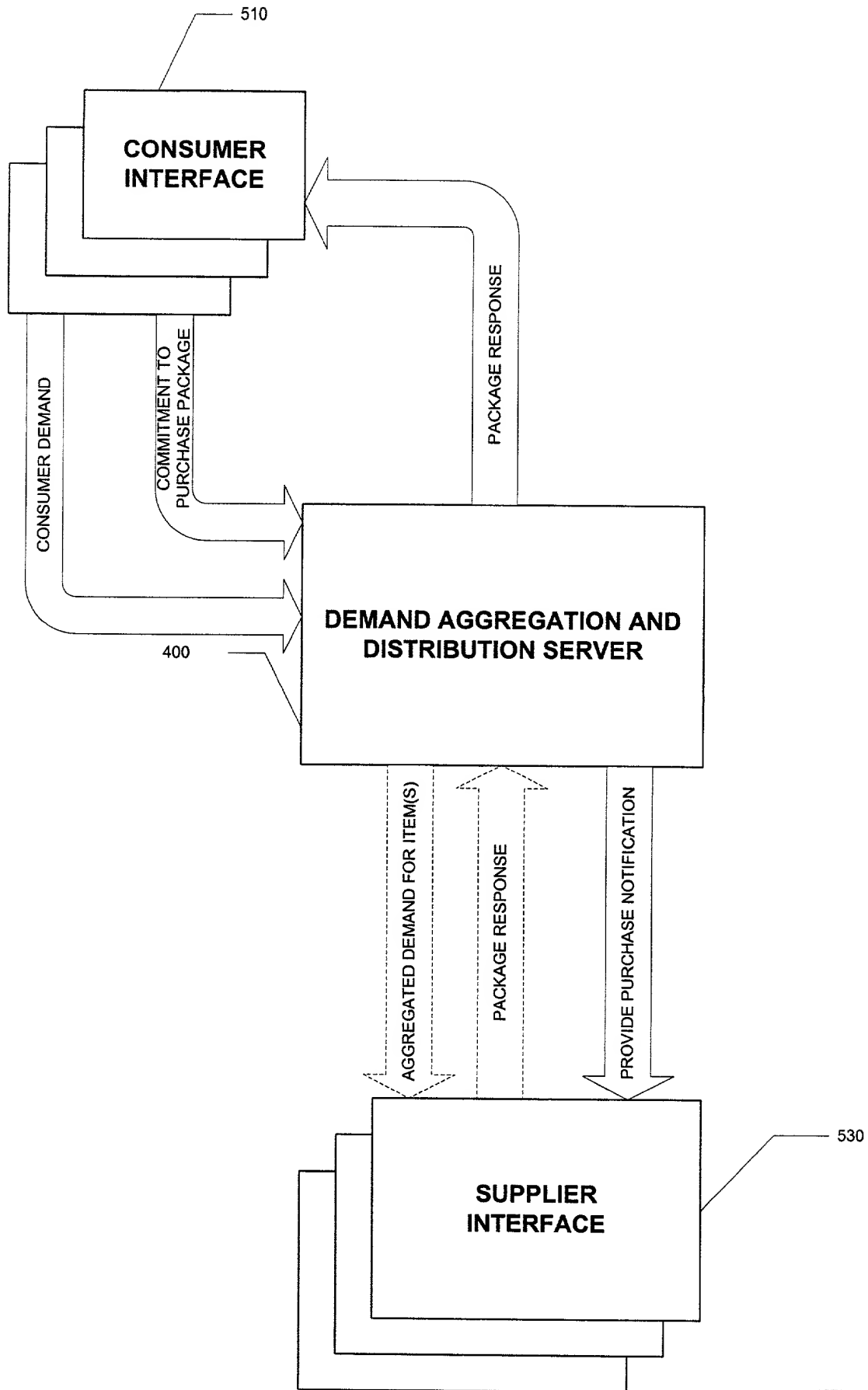


FIG. 5

